

# ESRL Physical Sciences Laboratory Review

Organization Overview,  
Physical Sciences Research,  
Priority Setting



**Dr. Alexander E. MacDonald**

*Director, Earth System Research Laboratory  
DAA for Laboratories & Cooperative Institutes*

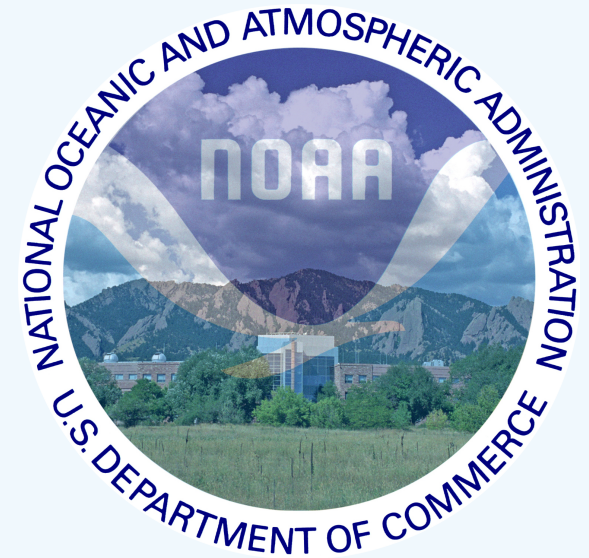
March 9-12, 2010



# Earth System Research Laboratory

## *Talk Overview*

- **ESRL - Organizational Overview**  
*ESRL Role within NOAA & OAR*
- **ESRL Mission, Approach**
- **Physical Science Research at ESRL**  
*Major Foci • Major Drivers*
- **Charting Our Way in the NOAA Climate Service**





# Earth System Research Laboratory

## Who We Are

### NOAA's Mission Line Offices

Oceanic & Atmospheric  
Research

National Marine Fisheries Service

National Weather Service

National Environmental Satellite,  
Data & Information Service

National Ocean Service

Program Planning & Integration

### Oceanic & Atmospheric Research

Assistant Administrator

*Richard Spinrad*

Deputy Assistant Administrator,  
Labs & Cooperative Institutes;  
Director, Earth Systems Research Lab

*Alexander MacDonald*

Deputy Assistant Administrator,  
Programs & Administration

*Craig McLean*

Earth System Research  
Laboratory

Air Resources  
Laboratory

Atlantic Oceanographic &  
Meteorological Laboratory

Great Lakes Environmental  
Research Laboratory

Pacific Marine  
Environmental  
Laboratory

National Severe  
Storms Laboratory

Geophysical Fluid  
Dynamics Laboratory





# Earth System Research Laboratory

## Overview & Mission



~610 staff  
~\$96 M (FY09)

**ESRL Directorate**  
& centralized support

David Skaggs Research Center



**Global Monitoring  
Division**

**Physical Sciences  
Division**

**Chemical Sciences  
Division**

**Global Systems  
Division**

Cooperative Institute for Research in Environmental Sciences (CIRES)  
Cooperative Institute for Research in the Atmosphere (CIRA)

### *ESRL Mission*

***To observe & understand the Earth system & to develop products  
through a commitment to research that will advance NOAA's environmental  
information & service on global-to-local scales***



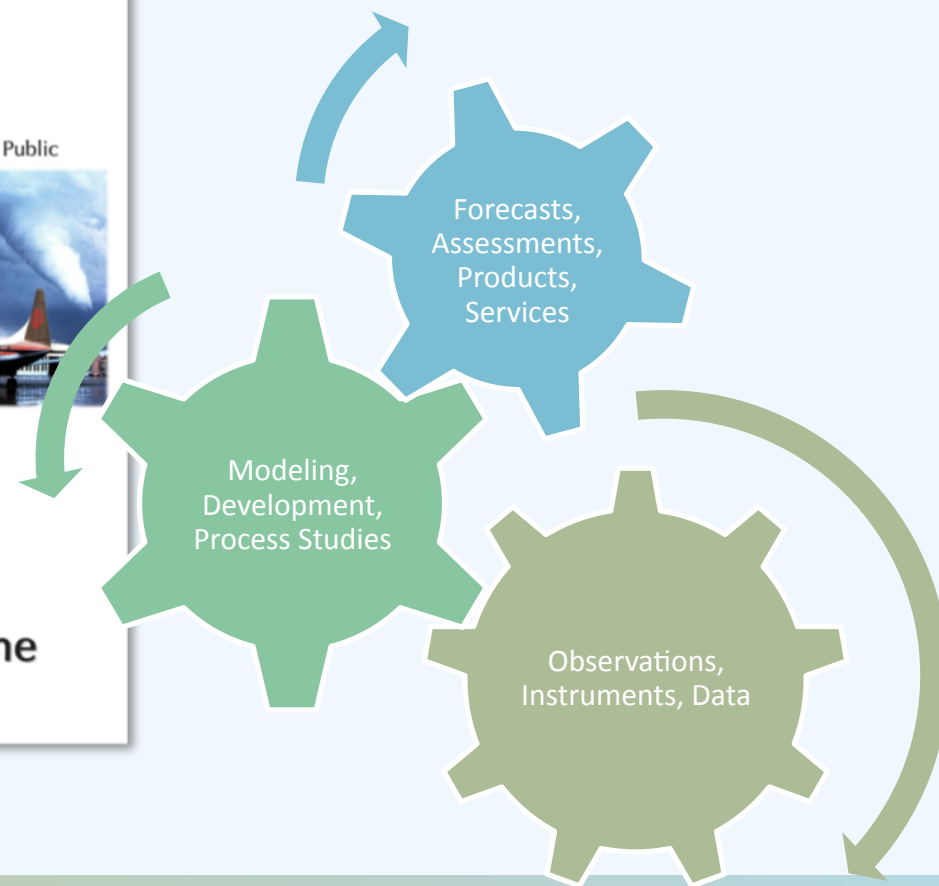
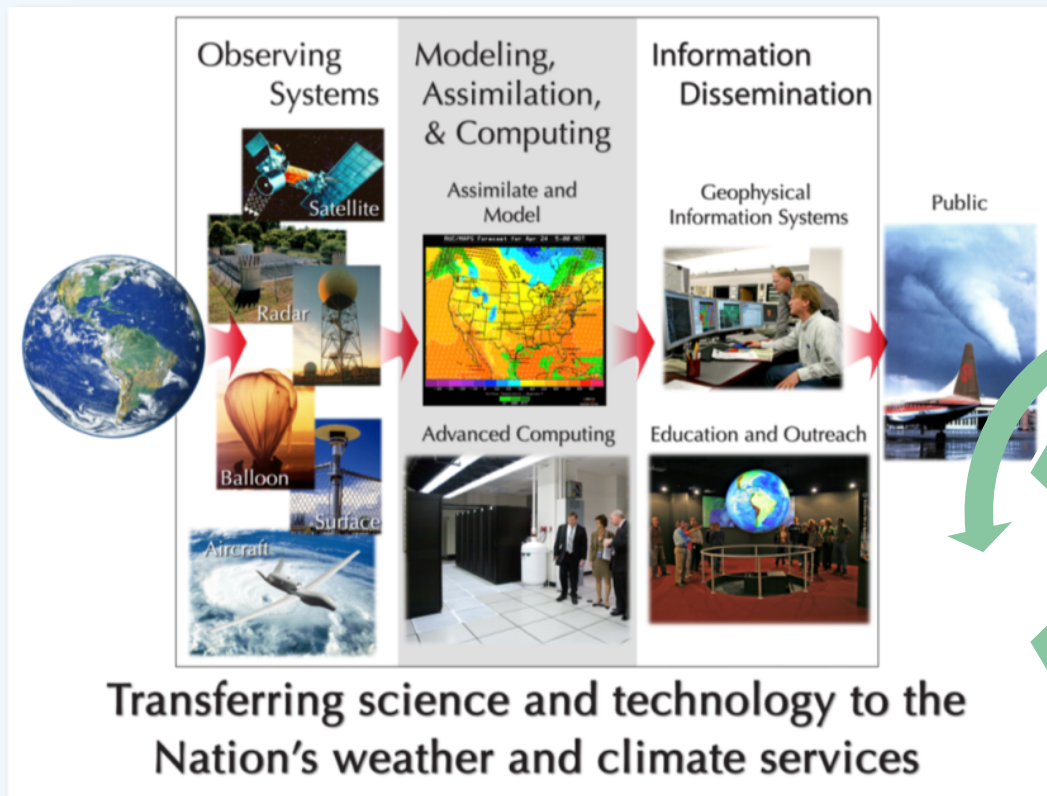




# Earth System Research Laboratory

## Approach

Comprehensive approach provides for 'end-to-end' science that supports NOAA's operational & information service missions in weather & climate



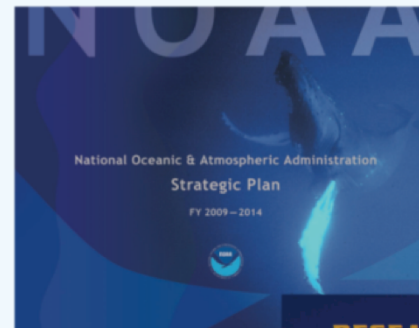


# Earth System Research Laboratory

## *Drivers & Priorities*

### Major Drivers:

- NOAA Strategic Plan
- NOAA Research Plan
- NOAA Next Generation Strategic Plan
- National Programs
- U.S. Legislation
- Interagency Agreements
- International Agreements



*You will hear more details over the next two days...*





# Earth System Research Laboratory

## Partnerships

The complexity of today's issues means 'no one can do it all'  
- *the ability to partner is of critical value* -

- **Cooperative Institutes** - *CIRES, CIRA, CIFAR, ...*
- **Other OAR Labs & Programs** - *ESRL (GMD, CSD), Climate Program Office, NSSL, PMEL, AOML, ARL, GFDL, ...*
- **Other NOAA Line Offices** - *NWS, NESDIS, NMFS, NOS*
- **Other U.S. Agencies** - *FAA, NASA, DOE, EPA, NSF, DOI, ...*
- **Academia** - *Many longstanding & productive partnerships!*
- **Private Industry** – *Aerospace/aviation, weather enterprise, museums, ...*
- **International** - *Australia Bureau of Meteorology, Taiwan Central Weather Bureau, Finnish Meteorological Institute, Roshydromet, Environment Canada, Korean Meteorological Administration, ...*

*Specifics will be given in the talks to come...*

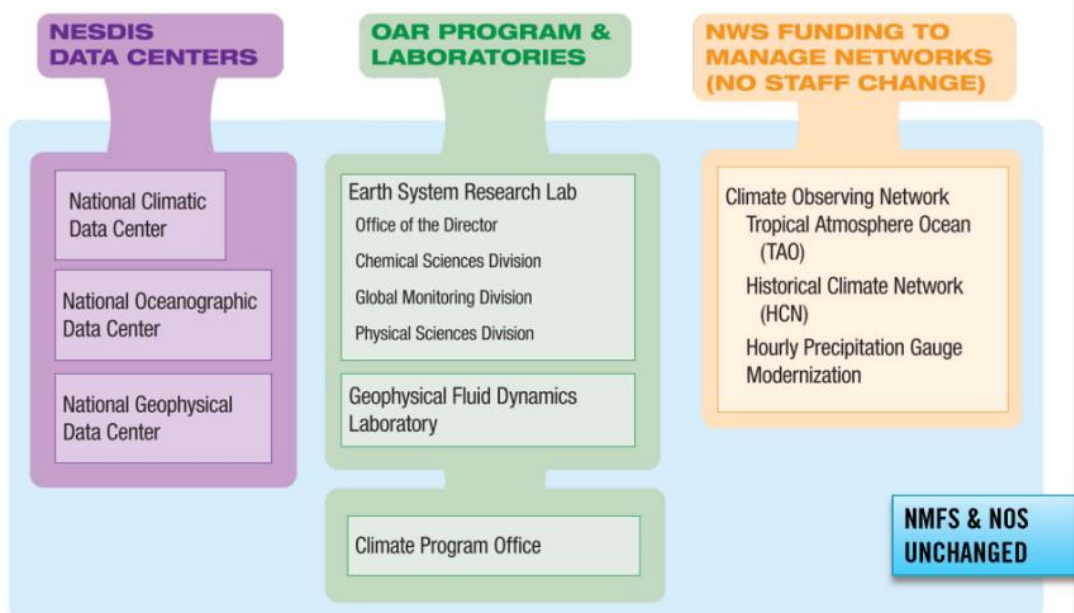


# Earth System Research Laboratory

## *Charting the Future*

Providing the Nation with Climate & Weather Services

### Proposed NOAA Climate Service (NCS)



*The physical location of these facilities will not change*

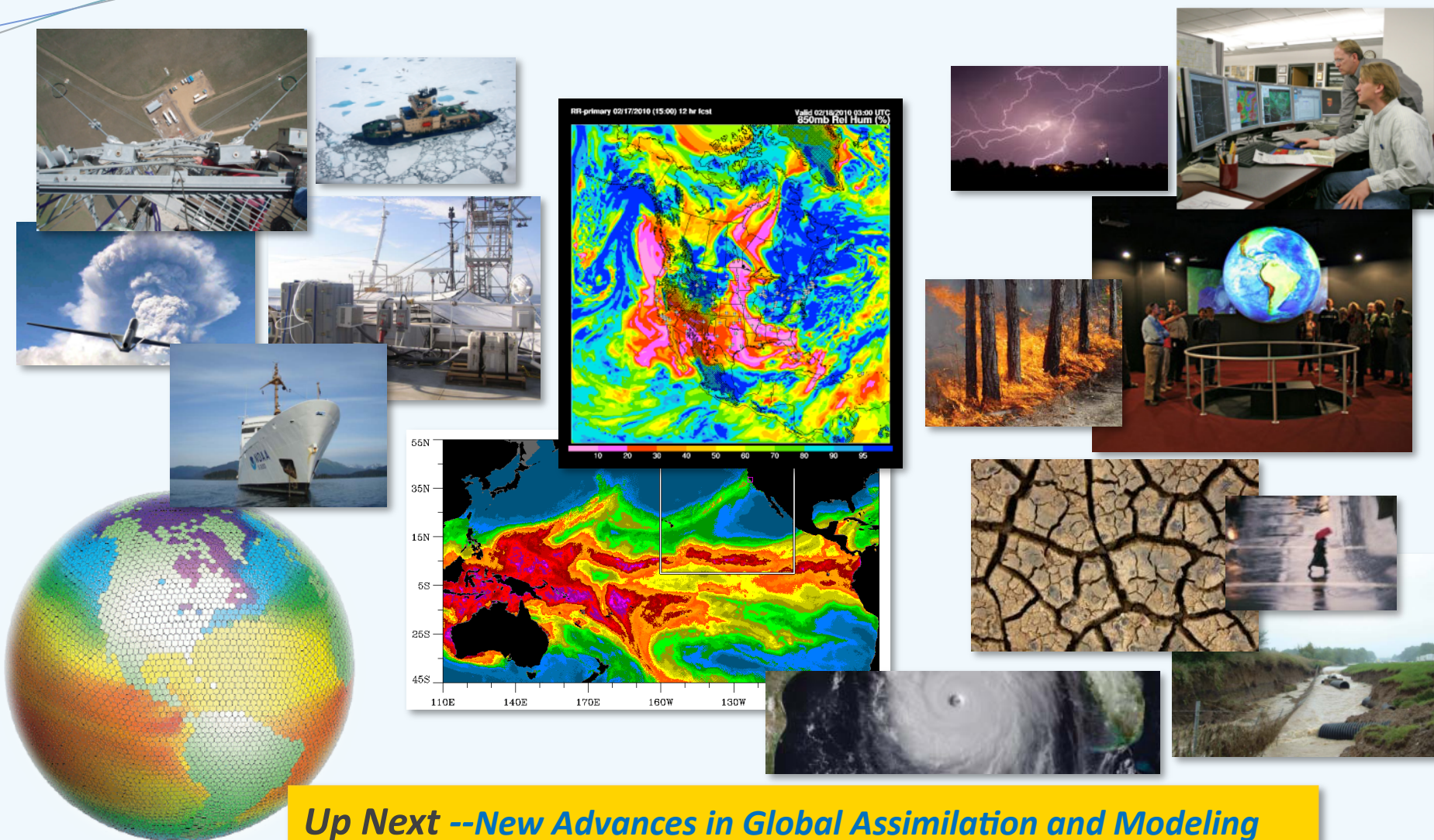
*More will be discussed in our closing remarks ...*





# Earth System Research Laboratory

*Welcome*



***Up Next --New Advances in Global Assimilation and Modeling***